Listing of the Claims:

1. (original) An apparatus comprising an integrated circuit structure, the integrated circuit structure comprising:

a substrate having a first side and a second side opposite the first side, the substrate including a first light passage area operable to allow light to pass through; and

a photoreceiver having an aperture located on a first side of the photoreceiver, the photoreceiver being flip-chip mounted to the substrate such that the first side of the photoreceiver faces the second side of the substrate, the photoreceiver operable to translate light signals received through the aperture into digital signals and to transmit the digital signals;

wherein the first light passage area is aligned with the aperture of the photoreceiver such that the light signals may be received through the light passage area and into the aperture of the photoreceiver.

2. (original) The apparatus of Claim 1, further comprising a circuit board, wherein the integrated circuit structure is mounted to the circuit board such that the first side of the substrate faces the circuit board.

3. (original) The apparatus of Claim 1, further comprising a circuit board including a waveguide and one or more mirrors, the waveguide and the one or more mirrors operable to guide the light signals through the first light passage area in the substrate and into the aperture in the photoreceiver.

4. (original) The apparatus of Claim 1, wherein the substrate of the integrated circuit structure is a single-layer substrate including a single conductive layer formed on the second side of the substrate.

5. (original) The apparatus of Claim 1, wherein the substrate of the integrated circuit structure is a two-layer substrate including a first conductive layer formed on the first side of the substrate and a second conductive layer formed on the second side of the substrate.

6. (original) The apparatus of Claim 1, wherein the substrate of the integrated circuit structure has a thickness of less than 150 microns.

7. (original) The apparatus of Claim 1, wherein the integrated circuit structure further comprises an integrated circuit die mounted to the second side of the substrate and operable to receive the digital signals transmitted by the photoreceiver.

8. (original) The apparatus of Claim 7, wherein the integrated circuit structure further comprises an encapsulant covering the photoreceiver and the integrated circuit die.

9. (original) The apparatus of Claim 1, wherein the first light passage area comprises an open area.

10. (original) The apparatus of Claim 1, wherein one or more at least substantially transparent materials are disposed in the first light passage area.

11. (original) The apparatus of Claim 1, wherein the integrated circuit structure further comprises a second light passage area between the photoreceiver and the substrate, the second light passage area being aligned with the first light passage area and operable to allow light to pass through such that light signals may be received through both the first and second light passage areas and into the aperture of the photoreceiver.

12. (original) The apparatus of Claim 11, wherein the second light passage area comprises an open area.

13. (original) The apparatus of Claim 11, wherein one or more at least substantially transparent materials are disposed in the second light passage area.

14. (original) The apparatus of Claim 11, wherein the integrated circuit structure further comprises an underfill disposed generally between the photoreceiver and the substrate and around the second light passage area.

15. (original) The apparatus of Claim 14, wherein;

the underfill is at least substantially transparent; and

a portion of the underfill extends into the second light passage area such that the light signals may be received through the portion of the underfill extending into the second light passage area and into the aperture of the photoreceiver.

16. (original) A method, comprising:

providing a substrate including a first light passage area operable to allow light to pass through, the substrate having a first side adapted to face a circuit board and a second side opposite the first side; and

flip-chip mounting a photoreceiver to the substrate such that an aperture located on a first side of the photoreceiver faces the second side of the substrate, the aperture being aligned with the first light passage area of the photoreceiver such that light signals may be received through the light passage area and into the aperture of the photoreceiver, the photoreceiver being operable to translate the light signals into digital signals and to transmit the digital signals.

17. (original) The method of Claim 16, further comprising mounting the integrated circuit structure to a circuit board such that the first side of the substrate faces the circuit board.

18. (original) The method of Claim 16, further comprising communicating light signals through a waveguide coupled to the circuit board, through the first light passage area in the substrate, and into the aperture in the photoreceiver.

19. (original) The method of Claim 16, wherein the substrate comprises a single-layer substrate including a single conductive layer formed on the second side of the substrate.

20. (original) The method of Claim 16, wherein the substrate comprises a two-layer substrate including a first conductive layer formed on the first side of the substrate and a second conductive layer formed on the second side of the substrate.

21. (original) The method of Claim 16, wherein the substrate has a thickness of less than 150 microns.

22. (original) The method of Claim 16, further comprising mounting an integrated circuit die to the second side of the substrate, the integrated circuit die to receive the digital signals transmitted by the photoreceiver.

23. (original) The method of Claim 16, further comprising forming a second light passage area between the photoreceiver and the substrate such that the second light passage area is aligned with the first light passage area to allow light signals to pass through both the first and second light passage areas and into the aperture of the photoreceiver.

24. (original) The method of Claim 23, further comprising forming an underfill generally between the photoreceiver and the substrate and around the second light passage area.

25. (original) An integrated circuit structure comprising:

a substrate having a first side and a second side opposite the first side, the substrate including a first light passage area operable to allow light to pass through, the substrate having a thickness of less than 150 microns;

a photoreceiver having an aperture located on a first side of the photoreceiver, the photoreceiver being flip-chip mounted to the substrate such that the first side of the photoreceiver faces the second side of the substrate, the photoreceiver operable to translate light signals received through the aperture;

a second light passage area between the photoreceiver and the substrate, the second light passage area being aligned with the first light passage area and the aperture of the photoreceiver such that light signals may be received through both the first and second light passage areas and into the aperture of the photoreceiver;

an integrated circuit die mounted to the second side of the substrate and operable to receive the digital signals transmitted by the photoreceiver; and

an encapsulant covering the photoreceiver and the integrated circuit die.

26. (original) The apparatus of Claim 25, wherein the substrate of the integrated circuit structure is a single-layer substrate including a single conductive layer formed on the second side of the substrate.

27. (original) The apparatus of Claim 25, wherein the substrate of the integrated circuit structure is a two-layer substrate including a first conductive layer formed on the first side of the substrate and a second conductive layer formed on the second side of the substrate.